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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of: **Kazuo TESHIROGI et al.** Group Art Unit: **1733**

Serial No.: **10/718,653** Examiner: **John L. GOFF**

Filed: **November 24, 2003** Confirmation No.: **1182**

For: **Film Lamination Apparatus And Method And A Manufacturing Method Of A Semiconductor Apparatus**

Attorney Docket Number: **032131**
Customer Number: **38834**

SUBMISSION OF REPLY BRIEF

Mail Stop: **Appeal Brief – Patents** May 27, 2008
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Sir:

In reply to the Examiner's Answer dated March 27, 2008, a Reply Brief is submitted with this paper. This paper is being timely filed.

If any additional fees are due in connection with this submission, please charge our Deposit Account No. 50-2866.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

REPLY BRIEF FOR THE APPELLANT

Ex parte **Kazuo TESHIROGI et al.** (applicant)

FILM LAMINATION APPARATUS AND METHOD AND A MANUFACTURING METHOD OF A SEMICONDUCTOR APPARATUS

Serial Number: **10/718,653**

Filed: **November 24, 2003**

Appeal No.:

Group Art Unit: **1733**

Examiner: **John L. GOFF**

Michael J. Caridi
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Date: **May 27, 2008**

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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REPLY BRIEF

Mail Stop: **Appeal brief - Patents**
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

May 27, 2008

Sir:

Appellants reply to the Examiner's Answer mailed on March 27, 2008. This paper is being timely filed.

REMARKS

(a) Examiner's Answer

The Examiner responded to the arguments in Appeal Brief as follows.

(1) Examiner's Response 1

In response to applicants' assertion that there is no reason provided by the Examiner why the skilled artisan would make the combination in the first place to derive the "readily expected" result, the Examiner responds as follows.

> Motivation for modifying Nagatomi et. al. with either one of Inada et al. or Shoffner, Da Costa, either one of Tsunashima et al. or Homma et al., and optionally Pool is fully set forth in the rejection to which appellants have not specially directed any arguments. Nagatomi et al. as modified by either one of Inada et al. or Shoffner, Da Costa, either one of Tsunashima et al. or Homma et al., and optionally Pool teach laminating a film on a principal surface of a semiconductor substrate using a heated rotatable roller formed of the claimed materials, having the claimed diameter, and heated and pressed under the claimed temperature and pressing load such that absent a showing otherwise one of ordinary skill in the art would readily expect that the limitation of "about 5 seconds after the roller is pressed to an area of the principal surface of the semiconductor substrate said area returns to a temperature about equal to the area's temperature prior to contact with the roller" occurs in the method taught by references the same as that which occurs in appellants claimed method as both are consistent and in agreement with each other as resulting in the same.

Pages 8-9 of the Examiner's Answer.

(2) Examiner's Response 2

In response to Applicants' assertion that ***Nagatomi et al.*** was filed in March 23, 1978 and such wafers were very thick so that there was no need to consider the cracking of the semiconductor substrate which is caused by the thermal stress, and hence no basis for combining

Nagatomi et al. with the multiple other references to derive the currently claimed invention exists, the Examiner asserts as follows.

> The claims are not commensurate in scope with this argument. The claims do not require the semiconductor substrate have any particular thickness.

Page 9 of the Examiner's Answer.

(3) Examiner's Response 3

In response to applicants' assertion that the manual controlled roller in ***Nagatomi et al.*** cannot control the pressing load to maintain 10-20N is further evidence that ***Nagatomi et al.*** does no consider thermal stress; and hence, ***Nagatomi et al.*** does not consider the pressing load of the roller, the Examiner asserts as follows.

> The claims are not commensurate in scope with this argument. The claims do not require the roller is controlled, the roller is automatic, or the roller maintain a pressing load of 10-20N. The claims only require "wherein said roller presses the film with a pressing load of 10-20N". Nagatomi et al. as modified by either one of Tsunashima et al. or Homma et al. manually press the roller at a pressing load up to 50 N, i.e. wherein said roller presses the film with a pressing load of 0 to 50 N including through 10 to 20 N, it being further set forth that the pressing load be experimentally determined as a function of that which is adequate to perform the lamination the manual pressing taught by Nagatomi et al. clearly capable of the claimed pressures as evidenced by Tsunashima et al. or Homma et al. Appellants have shown no unexpected results for the claimed pressing load other than the claimed load is that adequate for lamination, and appellants have not shown via argument or actual disclosure in the specification that controlling the pressing load to maintain 10-20N as argued controls thermal stress or is required to achieve "about 5 seconds after the roller is pressed to an area of the principle surface of the semiconductor substrate said area returns to a temperature about equal to the area's temperature prior to contact with the roller."

Pages 9-10 of the Examiner's Answer.

(4) Examiner's Response 4

In response to applicants' remarks that the figures of ***Nagatomi et al.*** evidence the ratio of the roller size to wafer size is very small; and hence, thermal difference of one area of the wafer as compared to another is not a concern, the Examiner responds as follows.

> The claims are not commensurate in scope with this argument. The claims do not require the ratio of the roller size to wafer size.

Page 10 of the Examiner's Answer.

(5) Examiner's Response 5

In response to applicants' remarks that the present invention considers the cracking of the semiconductor substrate which is caused by the thermal stress due to differences in temperature between different areas of the wafer, and thus factors such as thickness and area ratio of the roller to the wafer must be considered, the Examiner responds as follows.

> The claims are not commensurate in scope with the arguments regarding the thickness of the semiconductor substrate, non-manual control of the pressing load so that a pressing load is maintained, or the ratio of the roller size to the semiconductor substrate size. Furthermore, Figure 7 and its associated description in the specification dose not demonstrate or describe anything regarding non-manual pressure control of the pressing load or the ratio of the roller size to the semiconductor size as resulting in "about 5 seconds after the roller is pressed to an area of the principal surface of the semiconductor substrate said area returns to a temperature about equal to the area's temperature prior to contact with the roller.

Page 10-11 of the Examiner's Answer.

(b) Applicants' Reply to the Examiner's Answer

The Examiner does not respond to the actual arguments made by the applicants. The Examiner's responses are that applicants do not address the reasons why the combination is not

obvious and that the claims are not commensurate in scope with applicant's arguments. On the other hand, the applicant's arguments are that there is no reason to combine the references. The listed features by the Examiner in the Examiner's Answer, such as the thickness of the semiconductor substrate etc., are examples of difference between the references in order to explain why the references cannot be combined to derive the currently claimed invention. The Examiner's Answer and rejection does not address the reason why the references would be combined. Therefore, the Examiner's Answer has no weight on this Appeal procedure.

(c) Arguments of the Appeal

(1) There is no reason whereby one of skill in the art would have combined the references to derive the current invention.

Nagatomi et al. is the primary reference relied upon by the Examiner in making the rejection. ***Inada et al.*** is not directly related to the semiconductor dicing art, but is relied upon by the Examiner for teaching a Teflon film. ***Shoffner et al.*** is not related to the semiconductor dicing art, but is relied upon by the Examiner for teaching a Teflon film. ***Da Costa et al.*** is relied upon by the Examiner for teaching a diameter of a roller. ***Tsunashima et al.*** is not related to the semiconductor dicing art, but is relied upon by the Examiner for teaching a pressing load. ***Homma et al.*** is not related to the semiconductor dicing art, but is relied upon by the Examiner for teaching a pressing load. ***Pool et al.*** is not related to the semiconductor dicing art, but is relied upon by the Examiner for teaching a Teflon film. As set forth in the appeal brief there is no reason in any of the references or in general knowledge to the skilled artisan to make the combination as the Examiner suggests to thereby derive the currently claimed invention.

(2) The key to supporting any rejection under 35 U.S.C. 103, as quoted in the M.P.E.P. §2141.III, is the clear articulation of the reason(s) why the claimed invention would have been obvious. ("The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn,* 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "'[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396.")

However, there is no cited teaching from any of the references as to why one of skill in the art would make the combination to utilize a rolling method whereby about 5 seconds after the roller is pressed to an area of the principal surface of the semiconductor substrate the area returns to a temperature about equal to the area's temperature prior to contact with the roller. In other words, there is no reason provided by the Examiner why the skilled artisan would make the combination in the first place to derive the "readily expected" result. As set forth in *Takeda v. Alphapharm* 492 F.3d 1350, 1356-1357; 83 USPQ2d 1169 (Fed. Cir. 2007), while the *KSR* Court rejected a rigid application of the teaching, suggestion, or motivation ("TSM") test in an obviousness inquiry, the Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" in an obviousness determination. *KSR*, 127 S. Ct. at 1731.

(3) The Examiner's Answer repeats the listing of features made by applicant in regard to ***Nagatomi et al.*** and asserts that these features are not within the claims. This is not applicants' argument. Applicants' argument is that ***Nagatomi et al.*** deals with thick wafers of 1978 and thus

does not need to consider the cracking of the semiconductor substrate which is caused by thermal stress. The roller of ***Nagatomi et al.*** covers a large area of the wafer at any one time using a manual practice. Therefore, ***Nagatomi et al.*** is not concerned with a configuration which has thermal differences of one area of the wafer as composed to another and would be interpreted by the skilled artisan accordingly. In addition, the other references except ***De Costa et al.*** are not directed to semiconductor dicing. Therefore, none of these references provide any reason for a method utilize a roller whereby about 5 seconds after the roller is pressed to an area of the principal surface of the semiconductor substrate the area returns to a temperature about equal to the area's temperature prior to contact with the roller as required by applicants' claims.

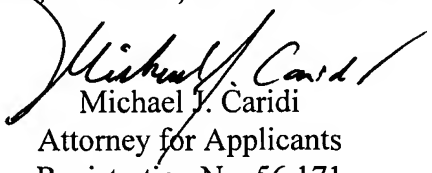
(d) Conclusion

The Examiner does not truly address the applicant's arguments. Furthermore, the Examiner does not explicitly provide any reason for why it would be obvious to combine the references. Accordingly, the Applicants respectfully requests withdrawal of the rejections, and allowance of claims 1-3, 15 and 18.

In the event this paper is not timely filed, appellants hereby petition for an appropriate extension of time. The fee for any such extension may be charged to our Deposit Account No. 50-2866, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP



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